

## **PALEOCENE-EOCENE TRAVERTINES IN THE ITABORAÍ BASIN (RIO DE JANEIRO STATE, SOUTHEASTERN BRAZIL)**

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Travertine lithotypes in Itaboraí basin include: 1) dense, banded white (brightly luminescent under cathodoluminescence) coarsely fibrous crystalline pure calcitic travertine, normally interbedded with light yellow or brown dully luminescent calcitic crusts; 2) massive, light, beige in colour and impure travertine, containing detrital grains (quartz, feldspar, clay) and fossils disseminated in a micritic dully luminescent calcitic matrix; 3) porous tufa with calcified roots and 4) pisoid travertine, containing spherical, concentrically laminated and banded (white/brown layers) pisoids. The stable isotope data obtained for the banded, massive, pisoid and tufa (root) travertines showed  $\delta^{18}\text{O}_{\text{PDB}}$  values ranging from -12.1 to -6.6‰ and  $\delta^{13}\text{C}_{\text{PDB}}$  between -3.6 and 0.0‰. Chemical analyses confirmed the high purity of the banded travertines (at least 53% CaO) and showed the high Si, Al, Rb, Ba and REE contents of the impure travertines due the presence of detrital grains. EDS data suggested the possible influence of iron in the colour of crusts and pisoids. Strontium occurs in all these carbonatic rocks with variable contents (275 - 2310 ppm). The banded travertines precipitated inorganically from meteoric waters raised along a fault and emerged at hot-springs. Carbon and calcium were furnished by Precambrian marbles of the basement. Detrital grains and fossils of the impure travertines were carried by the drainage system. Tufa formed in distal positions from the springs and probably under influence of organic agents.